

9-12 Content Area	Standard	Guides to Standard	Reflect	Discover	Imagine	Create	Share	Alignment to IM Student Project Outcomes:	
Science & Technology	Develop abilities of technological design	Identify a problem or design an opportunity. Students should be able to identify new problems or needs and to change and improve current technological designs.	x	x	X			Knowledge OM 2.4.8 Attitude OM 2.4.9 Skills OM 2.4.8	
		Propose designs and choose between alternative solutions. Students should demonstrate thoughtful planning for a piece of technology or technique. Students should be introduced to the roles of models and simulations in these processes.			X				
		Implement a proposed solution. A variety of skills can be needed in proposing a solution depending on the type of technology that is involved. The construction of artifacts can require the skills of cutting, shaping, treating, and joining common materials--such as wood, metal, plastics, and textiles. Solutions can also be implemented using computer software.					x		
		Evaluate the solution and its consequences. Students should test any solution against the needs and criteria it was designed to meet. At this stage, new criteria not originally considered may be reviewed.					x		
		Communicate the problem, process, and solution. Students should present their results to students, teachers, and others in a variety of ways, such as orally, in writing, and in other forms--including models, diagrams, and demonstrations.						x	
	Develop understandings about science and technology	Scientists in different disciplines ask different questions, use different methods of investigation, and accept different types of evidence to support their explanations. Many scientific investigations require the contributions of individuals from different disciplines, including engineering. New disciplines of science, such as geophysics and biochemistry often emerge at the interface of two older disciplines.			x				Engagement OM 2.4.5
		Science often advances with the introduction of new technologies. Solving technological problems often results in new scientific knowledge. New technologies often extend the current levels of scientific understanding and introduce new areas of research.							
		Creativity, imagination, and a good knowledge base are all required in the work of science and engineering.			x				
		Science and technology are pursued for different purposes. Scientific inquiry is driven by the desire to understand the natural world, and technological design is driven by the need to meet human needs and			x				

		<p>solve human problems. Technology, by its nature, has a more direct effect on society than science because its purpose is to solve human problems, help humans adapt, and fulfill human aspirations. Technological solutions may create new problems. Science, by its nature, answers questions that may or may not directly influence humans. Sometimes scientific advances challenge people's beliefs and practical explanations concerning various aspects of the world.</p>						
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